Bathymetric Swath Employed in the Delineation of Geomorphologic Features

MAGNO,E.C.F., TORRES, L.C., JECK, I.K., ALBERONI, A.A.L., SIMÕES, I.C.V.P. Diretoria de Hidrografia e Navegação – Marinha do Brasil, Niterói, Brasil.

The aim of this study is to present bathymetric swath results carried out by the use of the multibeam echosounder system and their application on digital terrain modeling (DTM) to support the geomorphologic features delineation. A bathymetric data set acquired by Brazilian Navy Hydroceanographic Survey Ship "Taurus" on São Paulo littoral off São Sebastião island in May-June 1999 was used. The multibeam system EM1000 designed by Kongsberg Simrad mounted on NHo Taurus is capable of conducting bathymetric swath at transversal angles up to 150° spanning through 60 beams and a covers horizontally 7.4 times the local depth. The ship navigation was conducted by Differential Global Positioning System (DGPS) and the data was acquired to assure 200 per cent overlap in terms of adjacent bathymetric profiles. The data set after a careful and systematic processing resulted on a high-resolution DTM. Confidence in multibeam data is strongly superior to that obtained from single beam bathymetric data. The maps generated from this system present high resolution and reproduce seafloor features in detail. For this reason the bathymetric swath data may be considered an important tool in order to support and to contribute to geomorphologic features delineation, mainly in the shallow shelf domain.